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- 1. Polypeptide which exerts the biological activity of a GABA B receptor and which comprises an amino acid sequence which has at least 70% identity with a sequence of SEQ ID NO: 2, SEQ ID NO: 4 or SEQ ID NO: 6.
- 2. Polypeptide according to Claim 1, characterized in that the amino acid sequence corresponds to a sequence of SEQ ID NO: 2, SEQ ID NO: 4 or SEQ ID NO: 6.
- 3. Nucleic acid comprising a nucleotide sequence which encodes a polypeptide according to Claim 1.
- 4. Nucleic acid according to Claim 3, characterized in that it is single- or double-stranded DNA or RNA.
- 5. Nucleic acid according to Claim 4, characterized in that it is a fragment of genomic DNA or cDNA.
- Nucleic acid according to Claim 3, characterized in that the nucleotide sequence corresponds to a sequence of SEQ ID NO: 1, SEQ ID NO: 3 or SEQ ID NO: 5.
- Nucleic acid according to Claim 3, characterized in that it hybridizes under stringent conditions to the sequences of SEQ ID NO: 1, SEQ ID NO: 3 or SEQ ID NO: 5.
 - 8. DNA construct comprising a nucleic acid according to any of Claims 3 to 7 and a heterologous promoter.

- 9. Vector comprising a nucleit acid according to any of Claims 3 to 7 or a DNA construct according to Claim 8.
- 10. A vector according to Claim 9, characterized in that the nucleic acid is operatively linked to regulatory sequences which ensure the expression of the nucleic acid in pro- or eukaryotic cells.
- 11. Host cell containing a nucleic acid according to any of Claims 3 to 7, a DNA construct according to Claim 8 or a vector according to Claim 9 or 10.
- 12. Host cell according to Claim 11, which is a prokaryotic cell, in particular E. coli.
- 13. Host cell according to Claim 1, which is a eukaryotic cell, in particular a mammalian or insect cell.
- 14. Antibody which binds specifically to a polypeptide according to Claim 1.
- Transgenic invertebrate containing a nucleic acid according to any of Claims 3 to 7.
 - 16. Transgenic invertebrate according to Claim 15, which is Drosophila melanogaster or Caenorhabditis elegans.
- 25 17. Transgenic progeny of an invertebrate according to Claim 15 or 16.
 - 18. Method of generating a polypeptide according to Claim 1, comprising
- culturing a host cell according to any of Claims 11 to 13 under conditions which ensure the expression of the nucleic acid according to any of Claims 3 to 7, or

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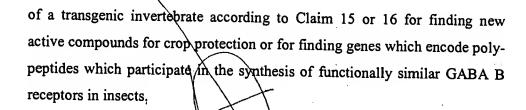
- (b) expressing a nucleic acid according to any of Claims 3 to 7 in an invitro system, and
- obtaining the polypeptide from the cell, the culture medium or the invitro system.
 - 19. Method of generating a nucleic acid according to any of Claims 3 to 7, comprising the following steps:
 - (a) full chemical synthesis in a manner known per se, or
 - (b) chemical synthesis of oligonucleotides, labelling of the oligonucleotides, hybridizing the oligonucleotides to DNA of a genomic library or cDNA library generated from insect genomic DNA or insect mRNA, respectively, selecting positive clones and isolating the hybridizing DNA from positive clones, or
 - chemical synthesis of oligonucleotides and amplification of the target DNA by means of PCR.
 - 20. Method of generating a transgenic invertebrate according to Claim 15 or 16, which comprises introducing a nucleic acid according to any of Claims 3 to 7 or a vector of Claim 9 or 10.
 - 21. Method of finding new active compounds for crop protection, in particular compounds which alter the properties of polypeptides according to Claim 1, comprising the following steps:
- 30 (a) providing a host cell according to any of Claims 11 to 13,

- (b) culturing the host cell in the presence of a chemical or of a sample comprising a multiplicity of chemicals, and
- (c) detecting altered properties.
- 22. A method of finding a chemical which binds to a polypeptide according to Claim 1, comprising the following steps:
 - (a) contacting a polypertide according to Claim 1 or a host cell according to any of Claims 11 to 13 with a chemical or a mixture of chemicals under conditions which permit the interaction of a chemical with the polypeptide, and
 - (b) determining the chemical which binds specifically to the polypeptide.
- 23. Method of finding a chemical which alters the expression of a polypeptide according to Claim 1, comprising the following steps:
 - (a) contacting a host cell according to any of Claims 11 to 13 or a transgenic invertebrate according to Claim 15 or 16 with a chemical or a mixture of chemicals,
 - (b) determining the concentration of the polypeptide according to Claim 1, and
 - (c) determining the chemical which specifically affects the expression of the polypeptide.
- Use of a polypeptide according to Claim 1, of a nucleic acid according to any of Claims 3 to 7, of a vector according to Claim 9 or 10, of a host cell according to any of Claims 11 to 13, of an antibody according to Claim 14 or

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25. Use of a modulator of a polypeptide according to Claim 1 as insecticide.

